

Tamara Preiss Vice President Federal Regulatory and Legal Affairs

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August 20, 2018

Ms. Marlene H. Dortch Secretary Federal Communications Commission 445 Twelfth Street, SW Washington, DC 20554

RE: Amendment of Parts 1 and 22 of the Commission's Rules with Regard to the Cellular Service, Including Changes in Licensing of Unserved Areas, WT Docket No. 12-40

Dear Ms. Dortch:

Pursuant to a July 18 request from the Wireless Telecommunications and Public Safety and Homeland Security Bureaus, following a conference call with Staff on June 15, 2018, Verizon is providing additional information on its testing of Power Spectral Density (PSD) operations in six markets that we have previously described.<sup>1</sup>

Background. In a letter filed jointly with AT&T Services, Inc., on May 10, 2016, Verizon committed to conduct testing of the Commission's new PSD limits for the Cellular Service to demonstrate that operation of mobile services in the 800 MHz band at the new PSD limits will not increase the potential for harmful interference into public safety equipment. As reported in our *April 25 Letter*, public safety agencies have raised no interference concerns with Verizon's initial operation at the new PSD limits in the six selected markets. Since June 2018, Verizon has been operating mobile services at the new PSD limits in 10 additional markets, again with no reports of harmful interference into public safety equipment.

While we are pleased to report that this initial experience conforms to our expectations and has resulted in no reported harmful interference, we reiterate our commitment to work quickly with any affected public safety agency, should harmful interference arise, to resolve the issue through the established mitigation process in the Commission's Rules (47 C.F.R. Sections 22.970-22.973 and 90.672-90.675).

We emphasize that operations at the new PSD limits will serve the public interest by allowing more efficient use of the 800 MHz cellular spectrum through LTE deployment. And our operations in these 16 markets at the new PSD limits have already demonstrated that use of the new limits will not increase the potential for harmful interference into public safety

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<sup>&</sup>lt;sup>1</sup> See Letter from Tamara L. Preiss, Verizon, to Ms. Marlene H. Dortch, Federal Communications Commission, WT Docket No. 12-40 (filed April 25, 2018) ("April 25 Letter").

Ms. Marlene H. Dortch August 20, 2018 Page 2

equipment. Verizon is thus proceeding with the second phase of operations at the new PSD levels in the 10 additional markets, consistent with its commitments in the May 20, 2016, letter.<sup>2</sup>

Additional Information. In response to Staff's questions, Verizon states as follows:

- 1. During the conference call, Verizon stated that Chicago public safety entities had designated Motorola Solutions as the contact point for the testing.
  - Please identify the public [safety] entities (including names/titles of persons at each entity) that designated Motorola
    - o State of Illinois Jeff Sexton
    - o Village of Schaumburg Mike Smith
  - Please clarify Motorola's role: e.g. did Motorola decide to use only Motorola radios in the testing? Did Motorola use the radio models in use by the public safety entities who designated Motorola for the tests? Did Motorola specify that the testing was to be conducted 100 meters from the Cellular antenna?
    - Motorola designated itself as the single point of contact (SPOC) for this testing. Motorola also informed APCO that it would be the SPOC. Motorola decided to do the testing in "close proximity" to the test sites. The specific locations were based on Motorola's RF evaluation, which was done based on data Verizon provided.
- 2. In Verizon's April 25, 2018, letter, the paragraph following the description of the Chicago test states that "Verizon followed the same procedures in five other markets." What is meant by "the same procedures"?
  - Does it mean, for example, that Motorola conducted the additional tests using Motorola radios in those other markets?
    - O We followed the same procedures regarding advance notices to public safety agencies within 113 km of the five other markets. As noted during the conference call and in our *April 25 Letter*, no public safety entities elected to participate in joint testing at the designated base station sites in the other markets.
    - o The testing in Chicago followed guidelines used by AT&T during its original public safety testing in Florida, including these elements:
      - 1. Establish a baseline RF measurement of downlink signal strength on AT&T's/Verizon's radio network at the selected area.
      - 2. Establish a baseline of RF measurements such as signal strength, noise floor level, and bit error rate on the public safety radio network at the selected area.
      - 3. Clear any existing interference issue in the selected test area.
      - 4. While operating without interference on the public safety radio network, AT&T/Verizon modified the site's RF parameters on

<sup>&</sup>lt;sup>2</sup> See Amendment of Parts 1 and 22 of the Commission's Rules with Regard to the Cellular Service, Including Changes in Licensing of Unserved Areas, Second Report and Order, Report and Order, and Second Further Notice of Proposed Rulemaking, 32 FCC Rcd 2518, ¶ 25 (2017).

- Cellular B-band (880-890 MHz) to emulate PSD conditions of 125 Watts/MHz ERP.
- 5. Public safety representatives can perform the necessary tests at various distances and locations around the AT&T/Verizon site.
- If not, provide the details of the other five tests, including who conducted them and what radios were used.
  - O We turned up test sites in the other five markets at the new PSD levels and gave public safety agencies an opportunity to test at a convenient schedule for them within the given time frame that the sites were activated. We also monitored the 800 MHz Public Safety interference trouble ticketing portal for any incoming interference complaints. There were no reports of harmful interference during operations at the new PSD levels.
- 3. Please provide a copy of the email used to advise public safety interests of the tests and invite them to participate. If materially different emails were sent to different public safety interests, please provide a sample of each.
  - o Representative emails (series of three) are attached as Exhibit A.
- 4. Please provide a copy of the R.F. field plots that you indicated (during the 6/15/18 teleconference) were furnished to public safety licensees.
  - o To clarify, we discussed with the Motorola representatives creating RF field plots for the Chicago sites, but the Motorola representatives decided to generate their own plots from the RF data Verizon provided. We do not have access to any plots Motorola may have created.
- 5. The May 2016 commitment letter jointly filed by Verizon and AT&T stated that the test markets would "include a representative sample of markets with both 800 MHz Cellular A block and 800 MHz ESMR ... operations." (emphasis supplied).
  - o Please provide a listing of markets tested in which ESMR operations were verified to exist together with Verizon Cellular operations (and specify whether A-block or B-block), and explain how that determination was made.
    - O A list of confirmed, active ESMR systems in each market and Verizon cellular licenses is presented below. We identified ESMR operators in the FCC's ULS database, and called to confirm. Listed below are those that confirmed ESMR operations in response to our inquiries and the type of equipment in use.

Market / ESMR Entity	Status	Equipment	Call Sgin
Charlotte Market - VZW owns A and B Band Licenses	Active		KNKA329 / KNKA276
CITY OF ASHEVILLE, NC	Active	Motorola Equipment	<u>WNXR226</u>
SC Department of Administration (DTO)	Active	Motorola Equipment	<u>WPQZ717</u>
Chicago Market - VZW owns B Band License	Active		KNKA200
ILLINOIS, STATE OF	Active	Motorola Equipment	<u>WPKX554</u>
AUBURN, CITY OF	Active	Unknown.	<u>WPMB708</u>
Village of Bradley Police Department	Active	Motorola Equipment	<u>WPPH477</u>
BOARD OF REGENTS OF THE UNIVERSITY OF WISCONSIN	Active	Kenwood Equipment.	<u>WPYR645</u>
Grand Rapids Market - VZW owns A and B Band Licenses	Active		KNKA375 / KNKA300
AUBURN, CITY OF	Active	Unknown.	<u>WPMB708</u>
Greensboro Market- VZW owns A and B Band Licenses	Active		KNKA316 /KNKA291
Roanoke, City of	Active	Motorola Equipment	WNHX913
NORTH CAROLINA STATE HIGHWAY PATROL	Active	Motorola Equipment	<u>WQMY253</u>
Lansing Market- VZW owns A and B Band Licenses	Active		KNKA365 KNKA271
AUBURN, CITY OF	Active	Unknown.	<u>WPMB708</u>
Raleigh Market- VZW owns A and B Band Licenses	Active		KNKA358 /KNKA293
NORTH CAROLINA STATE HIGHWAY PATROL	Active	Motorola Equipment	<u>WQMY253</u>

- 6. What were the operating conditions of the radios during the test? i.e. were they tuned to a public safety frequency and evaluated while transmissions were made on that frequency by the public safety licensee; or were the radios in a squelched condition during the test?
  - We do not have access to this information.
- 7. During the conference phone call, Verizon stated that NPSTC had approved of the test protocol following the initial testing in the 6 markets.
  - Please provide the name and contact information for the NPSTC representative making that statement.
    - After the tests in the six markets, we described the procedures we used to Barry Luke, deputy executive director, and Stu Overby, Vice Chair of the spectrum committee.

Pursuant to the request of the Bureaus, Verizon is filing this report electronically in the above-referenced docket.

Respectfully submitted,

Jones Guin

cc: (by email)

Don Stockdale Roger Noel Nina Shafran

Nına Shafran Michael Wilhelm

# **EXHIBIT A**



Kapil Kaushik Principal Engineer Verizon Wireless 1500 Solana Blvd.
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Westlake, TX 76262
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M 817 403 1470
T 682 831 4823

December 04, 2017

### Concerned Public Safety entities:

The Federal Communications Commission (FCC) released its Second Report and Order and Second Further Notice of Proposed Rulemaking (FNPRM) on Cellular Reform on March 24th 2017, which modifies the rules in 47 CFR Part 22 governing Cellular radiotelephone systems. The rules went into effect on December 01 2017.

The new rules revise Section §22.913 on Effective Radiated Power limits to include new power rules based on the Power Spectral Density (PSD) model. The new power limits utilizing the PSD model are:

- 400 W/MHz ERP in non-rural areas, and 800 W/MHz in rural areas.
- Higher limits—up to 1000 W/MHz ERP in non-rural areas and up to 2000 W/MHz ERP in rural areas, subject to requirements below:

#### Requirement 1:

The Power Flux Density (PFD) validated by predictive modeling prior to the commencement of operations at 1.6 meters above ground level observed over at least 98% of the area within 1 km of each base station antenna should not exceed 3000 μW/m²/MHz

#### Requirement 2:

At least 30 but not more than 90 days prior to site activation at the higher PSD, advance written notice must be provided to any public safety licensee authorized in the frequency range 806-816/851-861 MHz with a base station located within a radius of 113 km of the Cellular base station where the higher ERP limit is set to be deployed.

Verizon voluntarily committed to providing notice to public safety agencies before transitioning any Cellular market to PSD-based operations. We also volunteered to work to identify six markets in which to conduct testing with local public safety agencies.

The site locations where we plan to transition to the PSD model on Cellular spectrum is attached to this letter. We anticipate conducting testing on 12/15/2017 starting at 9 am local time.

From a FCC ULS search, we discovered that entities below use equipment operating in the 806-815/851-860 MHz band, within a 113 km radius of our sites listed in the attachment. This letter is to notify you of our intent to test the PSD model in this market.

NAME	CALL SIGN
ANN ARBOR, CITY OF	KNIY845
MICHIGAN, STATE OF	KNNG860
GENESEE COUNTY OF	KNNL529
Wayne County - DHS-EM	WNAJ346
REGENTS OF THE UNIVERSITY OF MICHIGAN	WNHN225
GARDEN CITY, CITY OF	WNIE781
OAKLAND, COUNTY OF	WNIR926
LIVONIA, CITY OF	WNSM896
LANSING SCHOOL DISTRICT	WNWK275
OTTAWA COUNTY CENTRAL DISPATCH AUTHORITY	WNWS967
GRAND RAPIDS, CITY OF	WNXN886
EATON, COUNTY OF	WPBE653
STEUBEN, COUNTY OF	WPDU229
LANSING, CITY OF	WPE1830
KALAMAZOO, CITY OF	WPEJ201
KENT, COUNTY OF	WPEJ219
HURON VALLEY AMBULANCE	WPJY630
MICHIGAN STATE UNIVERSITY TELECOM SYSTEMS	WPLW996
CLINTON, COUNTY OF	WPNS770
Western Michigan University	WPPH813
County of Ottawa	WPQH424
The City of Jackson Act 196 Transportation Authority	WPTP518
Washtenaw County Office of the Sheriff	WQRM266
City of Westland	WQUR460
Nextel West Corp.	WQUY241
Lansing Board of Water and Light	WQWW958
State of Indiana (IPSC)	WQZW818

Verizon's local point of contact for this testing will be Milton Kashima and his contact number is 248-727-8941. Please provide the name of a point of contact at your agency by 12/08/2017 so that we can begin the work to prepare for this testing.

If you have any additional questions, please feel free to reach out to me or James Alderman at James.Alderman4@verizonwireless.com (Phone # 770 797 1049 or 770 238 6871).

Sincerely,

Kapil Kaushik

## ATTACHMENT

## Site locations

Site Name	Latitude	Longitude	City	County	State	DL MHz Range	UL MHz Range	Antenna Centreline (ft)
DIMONDALE	42.63694	-84.68833	DIMONDALE	Eaton	MI	885-890MHz	840-845MHz	225
HOLT	42.67055	-84.53972	LANSING	Ingham	MI	885-890MHz	840-845MHz	150
HOLT II	42.64888	-84.55666	Holt	Ingham	МІ	880-890MHz	835-845MHz	160
HOLT RD	42.64527	-84.47322	Mason	Ingham	М	885-890MHz	840-845MHz	160
196_CREYTS	42.66761	-84.67011	CHARLOTTE	Eaton	MI	880-890MHz	835-845MHz	140
I96_M99	42.66707	-84.58866	Lansing	Ingham	MI	880-890MHz	835-845MHz	175
MASON	42.61805	-84.47527	MASON	Ingham	М	885-890MHz	840-845MHz	225
MT HOPE RD - L	42.69947	-84.58052	Lansing	Ingham	МІ	880-890MHz	835-845MHz	150
ONONDAGA & KINNEVILLE	42.47366	-84.54280	Onondaga	Ingham	MI	885-890MHz	840-845MHz	185
STEWART & JENKS HWY	42.53895	-84.76264	Charlotte	Eaton	MI	885-890MHz	840-845MHz	192



Kapil Kaushik Principal Engineer Verizon Wireless 1500 Solana Blvd. Bldg. 6 Suite 500 Westlake, TX 76262 Kapil.Kaushik@verizonwireless.com M 817 403 1470 T 682 831 4823

January 12, 2018

## Concerned Public Safety entities:

We are sending this second message to you as we have not received a response to a notification we sent to you on December 4, 2017. We ask that you please review this notice carefully and provide a response to this letter by January 19, 2018 according to the instructions below.

The Federal Communications Commission (FCC) released its Second Report and Order and Second Further Notice of Proposed Rulemaking (FNPRM) on Cellular Reform on March 24th 2017, which modifies the rules in 47 CFR Part 22 governing Cellular radiotelephone systems. The rules went into effect on December 01 2017.

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Verizon's local point of contact for this testing will be Milton Kashima and his contact number is 248-727-8941. Please provide the name of a point of contact at your agency by 1/19/2018 so that we can begin the work to prepare for this testing.

If you have any additional questions, please feel free to reach out to me or James Alderman at James.Alderman4@verizonwireless.com (Phone # 770 797 1049 or 770 238 6871).

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February 08, 2018

## Concerned Public Safety entities:

We are sending this third message to you to follow up on previous communications sent on December 1, 2017 and January 12, 2018. We are writing to inform you that Verizon will be conducting Cellular PSD testing at the sites listed in the attachment to this letter. Testing will begin on February 19, 2018 and will end on February 21, 2018. You are invited to perform public safety equipment testing and report any issues you may experience at that time. More details are listed below.

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